NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC BASIN AREA
CONSERVATION PRACTICE STANDARD

CRITICAL AREA PLANTING

(Hectare, Acre)
CODE 342

DEFINITION

Planting vegetation, such as trees, shrubs, vines, grasses, or legumes, on highly erodible or critically eroding areas (does not include tree planting mainly for wood products).

PURPOSES

- To reduce sheet and rill erosion; reduce transport of sediment and other water-bome sediment contaminants down-slope, on-site or offsite; improve wildlife habitat and visual resources.
- To establish vegetation on disturbed areas such as construction sites and water control practices.

CONDITIONS WHERE PRACTICE APPLIES

On highly erodible or critically eroding areas that usually cannot be stabilized by ordinary conservation treatment and management and if left untreated can cause severe erosion or sediment damage. Examples of applicable areas are road cuts, fills, surface-mined areas, and denuded or gullied areas where vegetation is difficult to establish by usual planting methods.

CRITERIA

General Criteria Applicable to All Purposes

The selection of plant materials will be based on site specific conditions. The following conditions will be the minimum considered for plant materials selection:

1. Soil chemistry (pH, excess or deficiency in minerals affecting plant survival and growth, availability of nutrients).
2. Physical properties of the soils including structure, texture, bulk density, and pore space.
3. Soil water holding capacity and water movement
4. Soil organic matter.
5. Site topography (slope, position, shape) total rainfall and its intensity.
6. Existing and potential natural vegetation.
7. Potential effects of pests and competition.

Site preparation shall be sufficient for establishment and growth of selected plant materials and site appropriate. At a minimum, site preparation will reduce existing competition to a level that will ensure survival and rapid establishment.

Where vegetation is to be established by direct seeding, site preparation shall ensure a favorable environment for seed germination. Conditions for a favorable environment include adequate soil water holding capacity and plant nutrients, and soil surface conditions that will retain the seed in place.

The plant materials selected must be adapted to the anticipated environmental stresses. The plant species' morphology and growth form must be suitable for the intended purpose.

Only viable, high quality, and adapted planting stock or seed will be used. Seeding rates will be based on pure live seed (PLS). Where necessary for seed germination, seed will be scarified as required.

The planting or seeding shall be done at a time and manner to ensure survival and growth of selected plants. Adequate soil moisture will be present at the time of planting or seeding.

The planting will be protected from adverse stresses such as insects, disease, livestock damage and fire.

Additional Criteria To Reduce Sheet and Rill Erosion; Reduce Transport of Sediment and Other Water-borne Contaminants Downslope, On-site or Off-site.

The established vegetation shall provide sufficient ground cover to significantly reduce the detachment and transportation of soil particles.

The location, layout and density of the planting will accomplish the purpose and function intended within a one (1) year period.

Additional Criteria To Establish Vegetation on Disturbed Areas such as Construction Sites and Water Control Practices.

Where seed is to be broadcast - drag, cultivate, or rake the area to insure good soil-seed contact. Seed shall have a soil cover of not more than one (1) inch.

When seeding grasses, apply nutrients at the rate of 80 lbs of nitrogen and phosphorus (500 lbs/acre of 16-16-0 or equivalent) or based on recommendations from a soil test. Apply at least one supplemental nitrogen treatment approximately three (3) months after application at the rate of 40 lbs per acre.

Apply a minimum of 2000 lbs/acre of hammered sand or crushed lime to disturbed soil with a subsoil pH below 5.5.

Apply mulch or quick-germinating nurse crop.

Irrigate the site when soil moisture is not adequate for seed germination or seedling survival.

The location, layout and density of the planting will accomplish the purpose and function intended within a three (3) month period.

PLANNING CONSIDERATIONS

Evaluate slopes and soils, erosive forces, adapted vegetative plant materials, time of year for proper establishment of vegetation, necessity for irrigation, soil fertility needs, visual aspects, fire hazards, and other special needs.

Where soil chemistry, especially soil pH and presence of aluminum in toxic qualities, will adversely affect plant growth, consider liming or other soil amendments to improve plant survival and growth.

Nutrient requirements of the selected plant materials should be met to ensure rapid establishment and to maintain plant vigor. Where feasible, soil nutrients levels should be determined through soil testing at an appropriate laboratory.

If planting or seeding is scheduled during anticipated periods of moisture stress, adequate irrigation as provided for under Pacific Basin standard, Irrigation System, Sprinkler (442) should be planned and implemented as part of the conservation plan.

Evaluate the need for mulching as described in Pacific Basin standard, Mulching (484).

Evaluate potential affect of competing vegetation on the survival and growth of the selected plant materials.

The potential of the selected plant materials to become a weed problem on adjacent sites or fields should be considered.

WATER QUANTITY

Critical area planting may have a minor effect on the quantity of surface and ground water. If there are large areas involved, there may be a reduction of surface runoff and increased infiltration and percolation.

Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

Effects of vegetation management on soil moisture.

Effects of increased organic matter on water holding capacity of the soil.

Potential for a change in plant growth and transpiration because of changed in soil water volume.

WATER QUALITY

This practice may reduce soil erosion and sediment delivery to surface waters. Plants may take up more of the nutrients in the soil, reducing the amount that can be washed into surface waters or leached into ground water.

During grading, seedbed preparation, seeding, and mulching, large quantities of sediment and associated chemical may be washed into surface waters prior to plant establishment.

Effects on erosion and movement of sediment and soluble and sediment attached substances carried by runoff.

Filtering effects of vegetation on movement of sediment and dissolved and sediment-attached substance.

Short-term and construction-related effects on downstream water courses.

Potential for earth moving to uncover or redistribute toxic materials and effects on water or vegetation.

Effects on the visual quality of downstream water resources.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation. Plant materials selection shall be from the attached list of approved plants for the Pacific Basin.

Specify the plant or seed species, sprigging or seeding rate, scarification or other seed treatment, planting method, and any fertilizer and/or lime requirements. Specifications shall address the need for mulch or quick-growing cover crop, descriptions of seedbed preparation and seeding operations.

OPERATION AND MAINTENANCE

Vegetation will be protected from fire and animals. Supplemental water will be provided as needed.

Periodic application of nutrients may be needed to maintain plant vigor.

To meet the intent of the practice, periodic mowing or trimming of plants may be required.